



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D4842-041
Job Sheet 172494



U/R

Part No: D4842-041

Job Qty: 2 ea

Part Name: Lower Cutter Assembly



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/20/18

Job Tracking No:

Due Date: 2/28/18

Created By: Linda Lacelle

Type: SOLD

Description:

Note: URF 19-692 DWG REV B U/R IPP REV:A 13.04.30 NEW ISSUE DD VERF:JLM IPP REV:B 13.11.01 AS PER DWG REV.B DD VERF:JLM

Ship Via:

as per concession 40000006786

DAS
9 10.2.22
9.80

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	2 Ea		2/27/18	0.00	0.00	Start Up Stores/Pkg-1		
110	Packaging	2 pcs		2/27/18	0.00	0.00	Packaging1-5		
120	Small Fab	2 pcs		2/28/18	0.00	4.55	Small Fab-7		
130	QC	2 pcs		2/28/18	0.00	0.00	QC5		
140	Packaging	2 pcs		2/28/18	0.00	0.00	Packaging3-2		
150	QC21-SA	2 Ea		2/28/18	0.00	0.00	QC21		

Part Op 120 - Assemble as per dwg and apply locitise 598 on all faying surfaces.
Descriptions:

DAS
21
9.80
FEB 22 2018

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D4839-1	Blade	4 Ea (2 ea)	90-Start up Operation	
D4842-1	Lower Cutter Deflector	2 Ea (1 ea)	90-Start up Operation	
D4842-3	Lower Cutter Body, LH	2 Ea (1 ea)	90-Start up Operation	
D4842-4	Lower Cutter Body, RH	2 Ea (1 ea)	90-Start up Operation	
MS21042L08	Nut	12 Ea (6 ea)	90-Start up Operation	
MS27039-08-19	Screw	12 Ea (6 ea)	90-Start up Operation	
NAS1149FN832P	Washer	24 Ea (12 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D4839-1	4	0	0
	D4842-1	2	10	0
	D4842-3	2	8	0
	D4842-4	2	4	0
	MS21042L08	12	843	0
	MS27039-08-19	12	728	0
	NAS1149FN832P	24	4,307	0

001024



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CANADA
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Email: sales@dartaero.com
www.dartaerospace.com

Container No: S043742



Part: D4842-041

Job No: 172494

Serial No/Batch: S043742

Revision: D4842

Inspector:

Date: 02/20/18

Part Specifications
Specifications could not be found.

Plex 2/20/18 9:20 AM dart.lacelle.linda

PRINTING DATE AND STATUS 14.02.2017 Assigned to QC repair result



Supplier Concession

PAGE
2 of 2

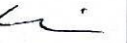
PLANT
Leonardo Helic. - Vergiate

Supplier NC N.	AWC 006/01	Date	02.02.2017	AW	400000061786	Purchase Order	4801373666
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DEFECT 0001

FO01 Wrong dimensions

attachment

 AgustaWestland A Finmeccanica Company		CONCESSION				Pag. 1 of 2	
Manuf. Doc. N.	AWC 006	Date		AW Doc. N.		Purchase Order	4800671131 4800722284 4801147764 4801186922 4801218851 4801288960 4801373666
AW P/N	6F9540V00231	S/N / Batch Number	B109195 Qty. (1) B133355 Qty. (2) B134314 Qty. (1) B134315 Qty. (1) B134842 Qty. (1) B137492 Qty. (1) B137355 Qty. (2) B137816 Qty. (1) B137818 Qty. (1) B137817 Qty. (1) B140379 Qty. (3) B140381 Qty. (2) B147002 Qty. (2) B150786 Qty. (1)	Grade	A	AW Drawing Issue	B
Description	Lower Cutter Assy			Batch Q.ty	20	Defective Q.ty	20
Manufacturer	Dart Aerospace			Model	AW169		
Defect(s) Description							
Leonardo has informed Dart that there are interference issues installing the lower cable cutter D4842-041 onto the Leonardo interface bracket.							
				Department	Inspector	Signature	Date
				Quality	DAS 16 9-89		2017/02/01
Defect(s) Cause							
The Lower Cutter body has a dimension of 10.9 +0.25/-0.00 mm. This dimension was reported as part of the approved FAI and has been met with all delivered product.							
				Department	Inspector	Signature	Date
				Quality	DAS 16 9-89		2017/02/01
Corrective Action						Complete Before	
In order to mitigate the interference issue for Leonardo, Dart is proposing to remove sufficient material to make the overall installation dimension at 22.15 mm +0.05/-0.35.							
				Department	Inspector	Signature	Date
				Quality	DAS 16 9-89		2017/02/01

For "MANUFACTURER" SUPPLIERS ONLY
ENGINEERING evaluation and proposal

Engineering evaluation

Investigation report

n.....

Compliance report

n.....

Dart's position is that this change will not impact the structural substantiation presented in Report DA169-4 for the lower cutter body since this is not a section with the lowest margin. Therefore removing 0.3 mm max from each part will not impact the structural integrity of the lower cutter assembly. The dimension on the cutter body part D4842-3/-4 will be 10.80 +0.00/-0.200.

The dimension change of the two lower cutter body parts mating, plus the sealant, anodize and primer layers will be defined as a dimension of 22.15 +0.05/-0.35 mm on the assembled lower cutterbody and will be incorporated into the D4842 drawing for inspection.

	Defect effects		Limitations
	Before any repair	After any repair	
	☐ yes	☐ yes ☐ no	☐ yes (specify) ☒ no
Safety	☐ yes	☐ yes ☐ no	
Life	☐ yes	☐ yes ☐ no	
Strength	☐ yes	☐ yes ☐ no	
Performances	☐ yes	☐ yes ☐ no	
Interchangeability	☐ yes	☐ yes ☐ no	
Reliability	☐ yes	☐ yes ☐ no	
Maintainability	☐ yes	☐ yes ☐ no	
Installability	☒ yes	☐ yes ☒ no	
Testability	☐ yes	☐ yes ☐ no	
Only aspect	☐ yes	☐ yes ☐ no	
Repair Proposal None			Decision to use ☐ Use repaired with specific repair ☐ Use repaired with known repair ☐ Use as is ☐ Use repaired for tests (see Limitations) ☐ Use as is for tests (see Limitations) ☒ Scrap
Concession Classification		☒ Major ☐ Minor	Submit after repair
			☐ yes ☐ no

PER CONCESSION 400000061786

Work Order ID 159676

Monday, April 17, 2017 1:27:38 PM

159676

U/R

Page 1

Item ID: D4842-3

Revision ID: URF 16-692

Item Name: Lower Cutter Body, LH

Start Date: 4/19/2017 Start Qty: 6.00

Required Date: 4/28/2017 Req'd Qty: 6.00

Reference: SCHEDULED/U

Approvals: Process Plan:

QC:

Date:

Date:

Accept

N9000040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

Tooling:

SPC (Y/N):

Date:

Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D4842

BUR

100

100

Bandsaw

Jeaspa Bandsaw

BAND SAW

Memo

Cut Blank at 7.250"

0.00

0.54

6

Ø

DAS

20

9-89

17-04-18

110

110

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

1-Machine per folio FB192

DWG REV: 8

FOLIO REV: 14

0.00

3.70

6

Ø

DAS

20

9-89

17-04-20

2- deburr and break all sharp edges

PER CONCESSION 400000061786

10.8mm +0.00mm

-0.20mm

0.425" to 0.000"

-0.0073"

QA Closed:

Date:

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
 Scrap ☐
 Use-as-is ☐
 Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐
 Machining ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Quality ☐
 Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
 Large Fab ☐ Composite ☐ Supplier ☐

Date :

Step #:

QTY Effective :

MRB (QSI042) Approval

Description Work Order Deviation

Disposition

Completed By

Lead hand / Supervisor
Approval VerificationQC / QA Coordinator
Approval**Root Cause**

Environment ☐ No Re-verification ☐
 Design ☐ Operator ☐
 Doc/Data ☐ Offset/Setup ☐
 Equip/Tooling ☐ Supplier ☐
 Handling/Pre ☐ Training ☐
 Material ☐ Use for Testing ☐
 Internal Transport ☐ Poor Information ☐
 Tribal Knowledge ☐ Rushing ☐
 LOA ☐ Product Improvement ☐
 Substation ☐ Process Improvement ☐
 Past Expiry Date ☐ Manufacturing Process ☐
 Misidentified ☐ Past Due ☐

Pressure/Forced ☐
 Bending ☐
 Centre Not Concentric ☐
 Cracks ☐
 Crimp/Kink/Ripple/Wave ☐
 Cuffs ☐
 Crushing ☐
 Heat Treat ☐
 Wave/Twist in Tube ☐
 Marks/Chatter ☐

FAULT CATEGORY

Temperature/Cure ☐
 Set-up ☐
 BOM/Route ☐
 Broken/Damage/Defect ☐
 Inspection Incomplete/Unqualified ☐
 Contamination ☐
 Countersink ☐
 Cut Too Short ☐
 Instructions Incomplete/Unclear ☐
 Drill Holes ☐

Power Loss/Surge ☐
 Folio/Program ☐
 Grain ☐
 Weld ☐
 Wrong Stock Pulled ☐
 Out of Sequence ☐
 Off-set ☐
 Misabeled ☐
 Fit/Function ☐
 Misaligned/off center ☐

Positioned Wrong ☐
 Outside Dimensions ☐
 Over/Under tolerance ☐
 Part Incorrect ☐
 Part Lost/Missing ☐
 Part Moved ☐
 Drawing ☐
 Finish ☐
 Misread ☐
 Turning Sequence ☐

OTHER :

Work Order ID 159676

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159676

Page 2

Item ID: D4842-3 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 16-692 Stop ***NS2***
Item Name: Lower Cutter Body, LH
Start Date: 4/19/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 4/28/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference: SCHEDULED/U
(CONCESSION) 4000 000 61786
Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00				6	0		DAS 20 9-89 17/04/20
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00				6	0		DAS 14 9-89 17/04/20
140 *140* Outsource4 Outsource process - Anodize	Outsource process-Anodize per QSI017 4.1.10.1 Memo Issue P/O to ATG : 36/66 1- Black Anodize as per Dwg D4842 2- PRIME AS PER DWG, SEE NOTE #2 Certification of Conformity is required	0.00 0.00				6		MAY 02 2017	DAS 13 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : _____							

Work Order ID 159676

159676

Page 3

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Item ID: D4842-3 Accept *N900040100* Setup Start *NS1*
 Revision ID: URF 16-692 Stop *NS2*
 Item Name: Lower Cutter Body, LH
 Start Date: 4/19/2017 Start Qty: 6.00 *6* Cust Item ID:
 Required Date: 4/28/2017 Req'd Qty: 6.00 *6* Customer:
 Reference: SCHEDULED/U

Concession 400000061786
 Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150	Receive & Inspect for Damage & Mat'l Certs	0.00							
-----	--	------	--	--	--	--	--	--	--

150

Packaging

Packaging

Memo

0.00

EXSP17-526

155	QC5- Inspect part completeness to step on W/O	0.00							
-----	---	------	--	--	--	--	--	--	--

155

QC

Quality Control

Memo

0.00

F.A.I.R. COMPLETION
REQUIRED

MATERIAL CERTIFICATION
REQUIRED

QC APPROVAL

ONLY
⑥ 17-05-30

DAS
9
9-89

180	Identify as per dwg & Stock Location: CCK124	0.00							
-----	--	------	--	--	--	--	--	--	--

180

Packaging

Packaging

Memo

0.00

***IDENTIFY WITH DART P/N USING FINE POINT PERMANENT INK
MARKER***

DAS
6
6 MAY 30 2017

POSITIVE RECALL

EFFECTIVE 17/04/18 AUTH 5
RELEASED 9 DATE 17-05-30

9-89

* ARC must be created by QA
 * ARC must contain concession Number
 * All Parts must be identified w/ concession Number
 * FAIR must be completed

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed:

Date:

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;"></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																							
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<table style="width:100%; border: none;"> <tr> <td colspan="4" style="width:30%; text-align: center;">Root Cause</td> <td colspan="4" style="width:70%; text-align: center;">FAULT CATEGORY</td> </tr> <tr> <td style="border: none;">Environment ☐</td> <td style="border: none;">Design ☐</td> <td style="border: none;">Doc/Data ☐</td> <td style="border: none;">Equip/Tooling ☐</td> <td style="border: none;">Handling/Pre ☐</td> <td style="border: none;">Material ☐</td> <td style="border: none;">Internal Transport ☐</td> <td style="border: none;">Tribal Knowledge ☐</td> <td style="border: none;">LOA ☐</td> <td style="border: none;">Substation ☐</td> <td style="border: none;">Past Expiry Date ☐</td> <td style="border: none;">Misidentified ☐</td> <td style="border: none;">No Re-verification ☐</td> <td style="border: none;">Operator ☐</td> <td style="border: none;">Offset/Setup ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;">Training ☐</td> <td style="border: none;">Use for Testing ☐</td> <td style="border: none;">Poor Information ☐</td> <td style="border: none;">Rushing ☐</td> <td style="border: none;">Product Improvement ☐</td> <td style="border: none;">Process Improvement ☐</td> <td style="border: none;">Manufacturing Process ☐</td> <td style="border: none;">Past Due ☐</td> <td style="border: none;">Pressure/Forced ☐</td> <td style="border: none;">Bending ☐</td> <td style="border: none;">Centre Not Concentric ☐</td> <td style="border: none;">Cracks ☐</td> <td style="border: none;">Crimp/Kink/Ripple/Wave ☐</td> <td style="border: none;">Cuffs ☐</td> <td style="border: none;">Crushing ☐</td> <td style="border: none;">Heat Treat ☐</td> <td style="border: none;">Wave/Twist in Tube ☐</td> <td style="border: none;">Marks/Chatter ☐</td> <td style="border: none;">Temperature/Cure ☐</td> <td style="border: none;">Set-up ☐</td> <td style="border: none;">BOM/Route ☐</td> <td style="border: none;">Broken/Damage/Defect ☐</td> <td style="border: none;">Inspection Incomplete/Unqualified ☐</td> <td style="border: none;">Contamination ☐</td> <td style="border: none;">Countersink ☐</td> <td style="border: none;">Cut Too Short ☐</td> <td style="border: none;">Instructions Incomplete/Unclear ☐</td> <td style="border: none;">Drill Holes ☐</td> <td style="border: none;">Power Loss/Surge ☐</td> <td style="border: none;">Folio/Program ☐</td> <td style="border: none;">Grain ☐</td> <td style="border: none;">Weld ☐</td> <td style="border: none;">Wrong Stock Pulled ☐</td> <td style="border: none;">Out of Sequence ☐</td> <td style="border: none;">Off-set ☐</td> <td style="border: none;">Mislabeled ☐</td> <td style="border: none;">Fit/Function ☐</td> <td style="border: none;">Misaligned/off center ☐</td> <td style="border: none;">Positioned Wrong ☐</td> <td style="border: none;">Outside Dimensions ☐</td> <td style="border: none;">Over/Under tolerance ☐</td> <td style="border: none;">Part Incorrect ☐</td> <td style="border: none;">Part Lost/Missing ☐</td> <td style="border: none;">Part Moved ☐</td> <td style="border: none;">Drawing ☐</td> <td style="border: none;">Finish ☐</td> <td style="border: none;">Misread ☐</td> <td style="border: none;">Turning Sequence ☐</td> </tr> </table>								Root Cause				FAULT CATEGORY				Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
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Monday, April 17, 2017 1:27:38 PM

Page 4

MAY 31 2017

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____

Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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Picklist Print

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Page 1

Work Order ID: 159676

159676

Parent Item: D4842-3

D4842-3

Parent Item Name: Lower Cutter Body, LH

Start Date: 4/19/2017

Required Date: 4/28/2017

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV: A NEW ISSUE JFS 13/04/30 VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B5.000X1.000		Purchased	No			100	f	13.0290	0.605	3.821053			DAS
M7075T6B5 000X1 000										**	3.454'	20 9-89	17-04-18
7075-T6 BAR 5.000-X1.000													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				MAT005		13.029							
				M136904		1.029			1.029'				
				M137300		12			2.425'				

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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		OTHER :																							

DART AEROSPACE LTD		Work Order: 159676
Description: Lower cutter Body, LH		Part Number: D4842-3
Inspection Dwg: D4842 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.13 X 45°	+/- .030	.130	✓		SL10	VERN
.168	+ .003 / - 0.000	.1695	✓			
3.68	+/- .030	3.678	✓			
.425	+0.000 / - .0078	.420	✓			
5.50	+/- .030	5.500	✓			
.70	+/- .030	.699	✓			
.84	+/- .030	.845	✓			
1.50	+/- .030	1.501	✓			
30.2°	+/- .5°	30.2°	✓		Protractor	
6.8°	+/- .5°	6.8°	✓		"	
23.7°	+/- .5°	23.7°	✓		"	
.90	+/- .030	.902	✓		SL10	VERN
.24	+/- .030	.246	✓			
.20	+/- .030	.200	✓			
6.52	+/- .030	6.524	✓			
4.93	+/- .030	4.930	✓			
1.50	+/- .030	1.514	✓			
1.47	+/- .030	1.470	✓			
4.580	+/- .010	4.580	✓			
4.220	+/- .005	4.220	✓			
2.110	+/- .005	2.110	✓			
.360	+/- .010	.360	✓			
.400	+/- .010	.400	✓			

Measured by: DAS 20 9-89	Audited by: DAS 14 9-89	Preliminary Approval:
Date: 17-04-19	Date: 17/04/20	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

DQA: _____ Date: _____

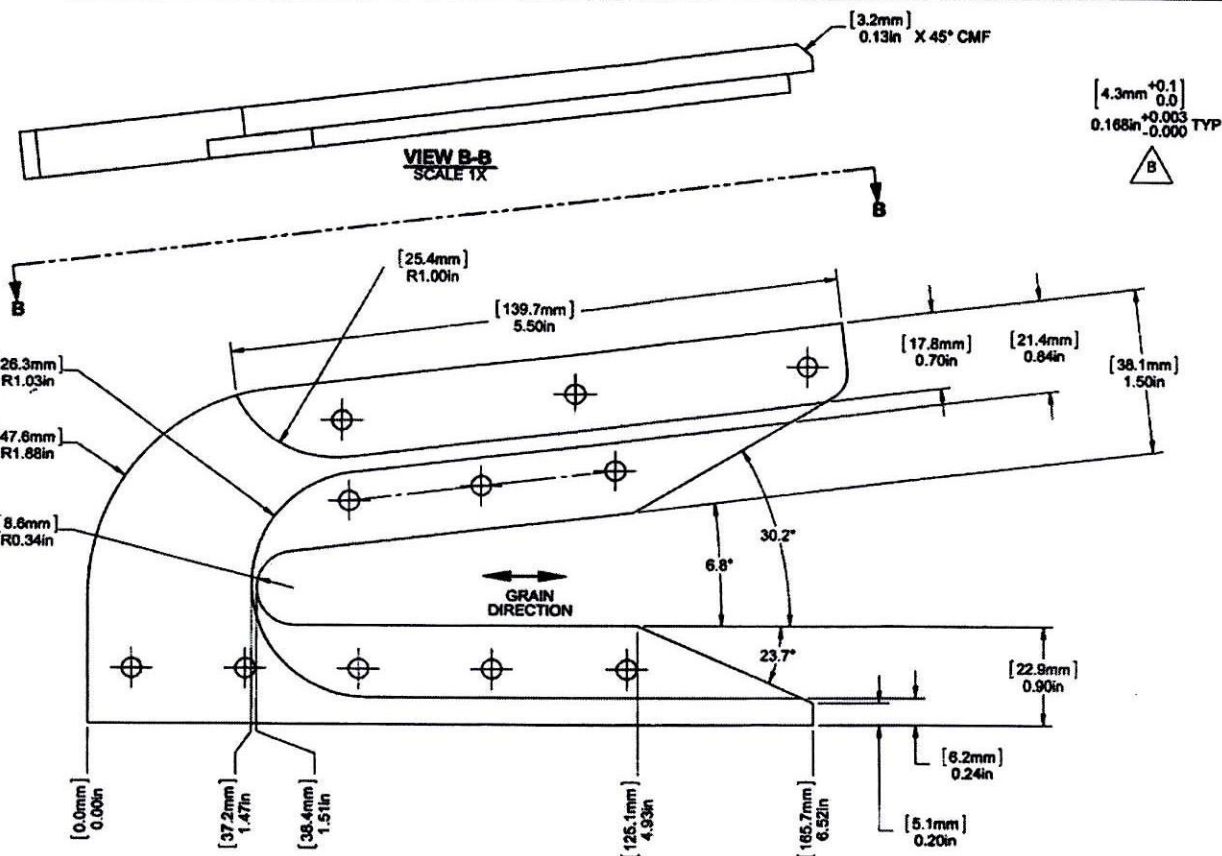


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QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
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OTHER : _____									



NOTES:

- 1) MATERIAL: 7075-T6 (OR T651/T6510/T6511/T652) ALUMINUM BAR
PER AMS-QQ-A-225/9 (OR AMS 4122/4123/4186/4187) OR
PER AMS-QQ-A-200/11 (REF DART SPEC M7075T6B)
- 2) FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK, AS PER QSI 017;
PRIME IAW MIL-P-23377 TYPE I CLASS N; 1-2 MIL MAX, AS PER QSI 005.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.49 lbs (0.22 kgs)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE: D4842-3-b.IGES

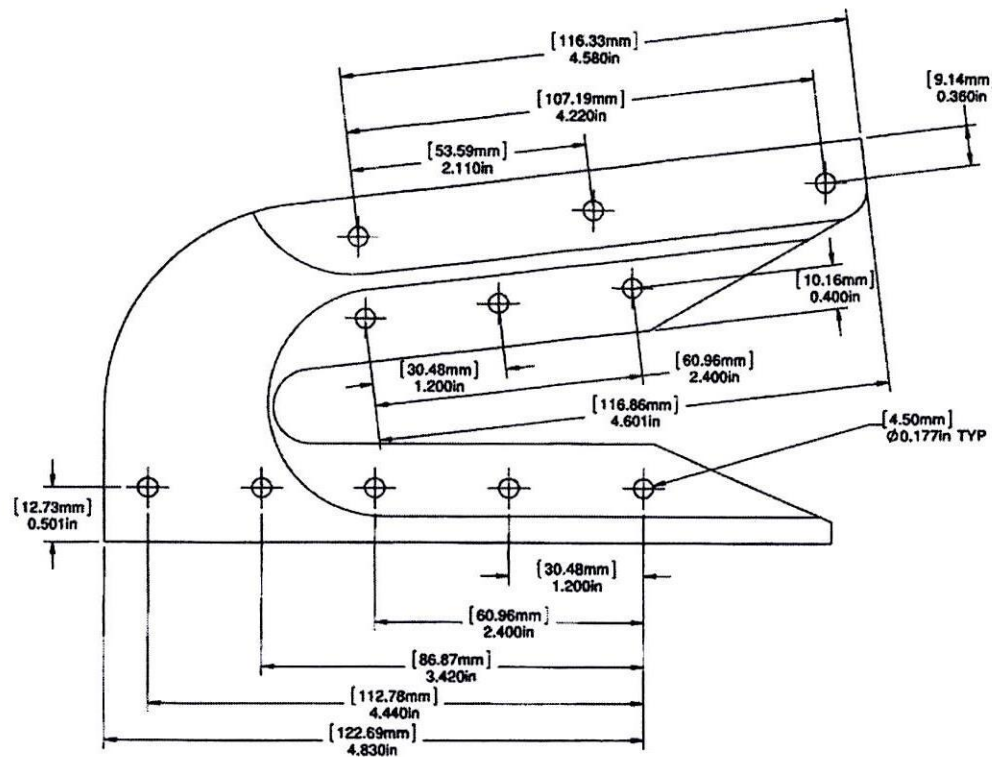
D4842-3 LOWER CUTTER BODY LH

UNDER REVIEW

URF 16-692 WM
16-12-21

RELEASED
2013-10-31

DESIGN	DB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DW		
CHECKED	AP	DRAWING NO. D4842	REV. B
MFG. APPR.	AP	SHEET 3 OF 6	
APPROVED	AP	TITLE LOWER CUTTER ASSY	SCALE NTS
DE APPR.	AP	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PROPRIETARY AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	
DATE	13.10.17		



D4842-3 LOWER CUTTER BODY LH
(AUXILLIARY VIEW)

UNDER REVIEW

URF 16-692 WM

16-12-21

RELEASE
2013-10-31
R

DESIGN	DB	DART AEROSPACE LTD	
DRAWN	DW	HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.P.	DRAWING NO.	REV. B
MFG. APPR.	27	D4842	SHEET 4 OF 6
APPROVED	16	TITLE	SCALE
DE APPR.	16	LOWER CUTTER ASSY	NTS
DATE	13.10.17	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PREPARED FOR CONTRACTOR AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OTHER THAN THAT FOR WHICH IT WAS PREPARED WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	

WCE

LEONARDO HELICOPTERS		Supplier Concession				PAGE 1 of 2	PLANT Leonardo Helic. - Vergiate
Part No.	AWC 006/01	Date	02.02.2017	AW Concession	400000061786	Purchase Order	4801373666
	6F9540V00231			Grade/Category	NC	Drawing Issue	
Description	PROTECTR, CCP ASSY LOWER			Batch Quantity	20,000	Defective Quantity	20,000
	GUIDO BRUSCINO					A/C Type/Model	AW6
	DART AEROSPACE LTD					Contract	
F001 - Wrong dimensions - 2017 09:40:16 GUIDO BRUSCINO (40067) Supplier document attached - B/N quantities and PO's listed in the of Defect Repetitiveness (same P/N - Defect Code) NO ☒ YES ☐ Follow							
BEARING Evaluation and Proposal							
Bearing Evaluations, including Specialist inputs:				Investigation Report n.		Compliance Report n.	
2017 18:01:48 MARCELLO STEFANELLI (9273) Part is acceptable with the action proposed by the supplier d.							
Location of Deviation from Type Design I.a.w. EASA Part 21A.91 : Minore/B							
Effect				Limitations			
	Before Repair		After Repair				
	☐ YES ☐ YES ☐ YES ☐ YES ☐ YES ☐ YES ☒ YES ☐ YES ☐ YES ☐ YES		☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☒ NO ☐ YES ☐ NO ☐ YES ☐ NO		☐ YES (to specificity) ☒ NO		
Duration							
Weight							
Clearances							
Interchangeability							
Reliability							
Availability							
Performance							
Cost							
Proposal:				Decision			
2017 18:01:48 MARCELLO STEFANELLI (9273) Attached supplier document.				☐ Use rep. with spec.repair(not yet applied) ☒ Use repaired with known repair(yet applied) ☐ Use As Is ☐ Use repaired for tests only(see Limitations) ☐ Use As Is for tests only(see Limitations) ☐ Scrap			
Decision Classification				Re-submit after Repair			
☐ MAJOR ☒ MINOR				☐ YES ☒ NO			
Part with Concession				Method :			
☒ NO ☐ YES							
MARCELLO STEFANELLI		CPE		Date		10.02.2017	
Inspection and tests to be performed							
Registration							
with repair WO ☒ Number:							
Evaluation:							
Decision							
	Use As Is (UTI)	Use Repaired (RIL)	Scrap (SCA)	S/N	Use As Is (UTI)	Use Repaired (RIL)	Scrap (SCA)
	☐	☐	☐		☐	☐	☐
	☐	☐	☐		☐	☐	☐
	☐	☐	☐		☐	☐	☐
	☐	☐	☐		☐	☐	☐
	☐	☐	☐		☐	☐	☐
	☐	☐	☐		☐	☐	☐
	☐	☐	☐		☐	☐	☐
Finalized	Use As Is (Q.ty)	Use Repaired (Q.ty)	Scrap (Q.ty)				
	AW ATE	AW CPE	Inspection Clearance Repair	Quality	Customer	MoD or Authority Representative	
	MARCELLO STEFANELLI						
	10.02.2017						

		Supplier Concession				PAGE 2 of 2	PLANT Leonardo Helic. - Vergiate
Supplier NC N.	AWC 006/01	Date	02.02.2017	AW	400000061786	Purchase Order	4801373666
DETECT 0001							
attachment		FO01	Wrong dimensions				
Empty area for details							



AgustaWestland
A Finmeccanica Company

CONCESSION

Pag.
1 of 2

Manuf. Doc. N.	AWC 006	Date		AW Doc. N.		Purchase Order	4800671131 4800722284 4801147764 4801186922 4801218851 4801288960 4801373666
AW P/N	6F9540V00231	S/N / Batch Number	B109195 Qty. (1) B133355 Qty. (2) B134314 Qty. (1) B134315 Qty. (1) B134842 Qty. (1) B137492 Qty. (1) B137355 Qty. (2) B137816 Qty. (1) B137818 Qty. (1) B137817 Qty. (1) B140379 Qty. (3) B140381 Qty. (2) B147002 Qty. (2) B150786 Qty. (1)	Grade	A	AW Drawing Issue	B
Description	Lower Cutter Assy			Batch Qty	20	Defective Qty	20
Manufacturer	Dart Aerospace			Model	AW169		
Defect(s) Description							
Leonardo has informed Dart that there are interference issues installing the lower cable cutter D4842-041 onto the Leonardo Interface bracket.							
				Department	Inspector	Signature	Date
				Quality	DAS 16 9-89		2017/02/01
Defect(s) Cause							
The Lower Cutter body has a dimension of 10.9 +0.25/-0.00 mm. This dimension was reported as part of the approved FAI and has been met with all delivered product.							
				Department	Inspector	Signature	Date
				Quality	DAS 16 9-89		2017/02/01
Corrective Action						Complete Before	
In order to mitigate the interference issue for Leonardo, Dart is proposing to remove sufficient material to make the overall installation dimension at 22.15 mm +0.05/-0.35.							
				Department	Inspector	Signature	Date
				Quality	DAS 16 9-89		2017/02/01



For "MANUFACTURER" SUPPLIERS ONLY

ENGINEERING evaluation and proposal

Engineering evaluation

Investigation report

n.....

Compliance report

n.....

Dart's position is that this change will not impact the structural substantiation presented in Report DA169-4 for the lower cutter body since this is not a section with the lowest margin. Therefore removing 0.3 mm max from each part will not impact the structural integrity of the lower cutter assembly. The dimension on the cutter body part D4842-3/-4 will be 10.80 +0.00/-0.200.

The dimension change of the two lower cutter body parts mating, plus the sealant, anodize and primer layers will be defined as a dimension of 22.15 +0.05/-0.35 mm on the assembled lower cutterbody and will be incorporated into the D4842 drawing for inspection.

	Defect effects		Limitations
	Before any repair	After any repair	
	☐ yes	☐ yes ☐ no	☐ yes (specify) ☒ no
Safety	☐ yes	☐ yes ☐ no	
Life	☐ yes	☐ yes ☐ no	
Strength	☐ yes	☐ yes ☐ no	
Performances	☐ yes	☐ yes ☐ no	
Interchangeability	☐ yes	☐ yes ☐ no	
Reliability	☐ yes	☐ yes ☐ no	
Maintainability	☐ yes	☐ yes ☐ no	
Installability	☒ yes	☐ yes ☒ no	
Testability	☐ yes	☐ yes ☐ no	
Only aspect	☐ yes	☐ yes ☐ no	
Repair Proposal None			Decision to use ☐ Use repaired with specific repair ☐ Use repaired with known repair ☐ Use as is ☐ Use repaired for tests (see Limitations) ☐ Use as is for tests (see Limitations) ☒ Scrap
Concession Classification ☒ Major ☐ Minor			Submit after repair ☐ yes ☐ no



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO36166

Purchase Order Date 5/2/2017

PO Print Date 5/24/2017

Page Number 1 of 11

Order From :

VC-ATG001

Ship To : DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED
MAY 25 2017

Contact Name

Vendor Phone

613-446-4544

Ship To Contact

Ship To Phone

Ship Via:

VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	159671	D4842-1 LOWER CUTTER REV. B	6/16/2017 Yes 6/16/2017		4.00	\$12.05	\$48.20
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							Line Total: \$48.20
2	159676	D4842-3 LOWER CUTTER REV. B	5/29/2017 Yes 5/29/2017		6.00	\$10.25	\$61.50
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							Line Total: \$61.50
3	159677	D4842-4 LOWER CUTTER REV. B	5/29/2017 Yes 5/29/2017		6.00	\$10.25	\$61.50
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

5/24/2017



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913318

Date: 25-May-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms

Ship Via

Quantity

Description

Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.

6
ea

Part: D4842-3
Lower Cutter

Rev: B

Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils).
Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0001-.0002" (1
- 2 mils) per drawing.
Job: 21054 PO: PO36166 Line: 2

6
ea

Part: D4842-4
Lower Cutter

Rev: B

Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils).
Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0001-.0002" (1
- 2 mils) per drawing.
Job: 21055 PO: PO36166 Line: 3

CERTIFICATE OF CONFORMANCE

A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements.

Date: 25/05/2017

Certified Signature: [Signature]

Receiver Signature: [Signature]

A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited.

Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.

Made in Canada.

Monday, April 17, 2017 11:22:35 AM

All amounts are calculated in domestic currency.

All Item ID/GL/WOs All Rec. Employees All Currencies

[illegible]



Castle Metals™

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3248910

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 11-APR-17	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier MANITOULIN		BOL No 3248910-2		

Shipment Details				Final Destination Branch - TOR			
Order No 4706819	Line No 3	Item No 752188.MO	Description 1.0000.PL.7075.T651.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 5 IN (± .1250/- .0000 IN) X 144.5 IN () - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12 Email P/s and certs to: clavoie@dartaero.com				
Purchase Order No 35724		Part Number		Ordered Qty 1.00 PCS		Invoice Qty 1.00 PCS	
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No. 120973957	Mill	Heat Number 	Mech Id	PCS 1	Width (IN)	Length (IN)	Shipped Qty(LBS) 75.2348

These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. Government or as otherwise authorized by U.S. law and regulations.

These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. Government or as otherwise authorized by U.S. law and regulations.

Date Printed: 11-APR-2017 03:25:11 PM

SHIP TO:
A M CASTLE METALS
475 ROYAL DRIVE, SUITE 600
KENNESAW, GA 30144

SOLD TO:
AM CASTLE & CO. SOLD TO
1420 KENSINGTON RD
SUITE 220
OAK BROOK, IL 60523

**KAISER
ALUMINUM**

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4419943

CUSTOMER PO NUMBER: 383160		WORK PACKAGE: 752188	CUSTOMER PART NUMBER: 752188		SHIP RUN/LOAD: 103575/1	GOV'T CONTRACT NUMBER:
KAISER ORDER NO: 1214391	LINE ITEM: 1	SHIP DATE: 26-MAY-2016	ALLOY: 7075	CLAD: BARE	TEMPER: T651	PRODUCT DESCRIPTION: KaiserSelect Plate
WEIGHT SHIPPED: 3610 LB	QUANTITY: 5 PCS EST.	TRUCK B/L #: 2060482	GAUGE: 1.0000 IN (25.4000 MM)		DIAMETER/WIDTH: 48.500 IN (1231.9 MM)	LENGTH: 144.500 IN (3670.3 MM)

MHU 2005043: LOT 787564A4: 5 pieces.

Certified Specifications

AMS 4045/RevK
ASTM B 209/Rev14
BSS 7055/RevB
DPS 4.713/RevAK
PS 21211/RevP

AMS-QQ-A-250/12/RevA
ASTM B 594/Rev13
CMMP 025/RevU
GAMPS 9101/RevB:AmdSCN1

AMS STD-2154/RevA
BAC 5439/RevJ
CSTI 006/RevE
GSS16100/RevG:Amd1

Test Code: 1512

Test Results

Lot: 787564A4 Cast 189 Drop 62 Ingot 3 Parent Lot: 173952B3 Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir - # Tests	Ultimate KS (MPa)	Yield KS (MPa)	Elongation %
T651		LT : 2 (Min:Max)	82.8 : 83.1 (571 : 573)	73.3 : 73.8 (505 : 509)	13.5 : 13.7

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.05	0.11	1.5	0.01	2.6	0.20	5.7	0.02	0.01	0.01	TOT 0.05

JUN 01 2016



MATERIAL RECEIPT INSPECTION FORM

MATERIAL # _____

DATE _____

QUANTITY ORDERED _____

MATERIAL CERT REQ'D _____

QUANTITY RECEIVED _____

QUANTITY INSPECTED _____

QUANTITY REJECTED _____

THICKNESS ORDERED _____

THICKNESS RECEIVED _____

SHEET SIZE ORDERED N/A

SHEET SIZE RECEIVED N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	N	
CORRECT FINISH	Y	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL	Y	N	
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	X	N	
CORRECT MATERIAL	Y	N	
CORRECT REF # TO LINK CERT	Y	N	
CORRECT MATERIAL IDENTIFICATION	Y	N	
CORRECT M# ON THE MATERIAL	Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK RECORD RESULTS BELOW:				
	HRC	HRB	DUR A	DUR D
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY _____		SIGNED OFF BY _____	
DATE <u>12/1/12</u>		DATE _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1083

PURCHASE ORDER

Purchase Order ID **PO35724**

Purchase Order Date 3/24/2017

PO Print Date 3/24/2017

Page Number 3 of 4

Order From:

METAL CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W 0E9
CANADA

VL-MET002

Ship To: DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone

Ship To Contact

Ship To Phone

Ship Via:

Ship Airt:

Yours ppd

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

USD

Destination-Collect

5 M7075T605 000X1 000

7075-T6 BAR 5 000" X
1 000"

4/13/2017

Yes

4/13/2017

12.00

\$37.38

\$448.56

MATERIAL: 7075-T6 OR T651 T6510/T6511/T62 ALUMINUM BAR
AS PER AMS-QQ-A-225/9 OR AMS 4122/4123/4186/4187 OR
PER AMS-QQ-A-200/11 OR QQ-A-250/12 CUT FROM PLATE

Line Total:

\$448.56

6 M7075T73B4 000x4 000

7075-T73 Bar 4.0 x 4.0
grain direction along 4"
wide

4/13/2017

Yes

4/13/2017

4.00

\$124.25

\$497.00

MATERIAL: 7075-T73/T7351/T73511 BAR AS PER AMS-QQ-A-200/11 OR AMS-QQ-A-225/9 OR AMS 4124 OR AMS-QQ-A-250/12 OR AMS 4078

NOTE: GRAIN DIRECTION MUST RUN ALONG 4" WIDE

Line Total:

\$497.00

7 M7075T73R1 000

7075-T73 Rd Bar 1 000

4/11/2017

Yes

4/11/2017

36.00

\$7.80

\$280.80

MATERIAL: 7075-T73 OR 7075-T7351/T73510/T73511 ROUND BAR
AS PER AMS-QQ-A-200/11 OR AMS-QQ-A-225/9

Note:

3/24/2017

SP17-4-17
SP17-4-3

Purchase Order Receipt Listing

Wednesday, February 22, 2017 2:07:05 PM

Page 1 of 1

All amounts are calculated in domestic currency.

All Vendors PO ID PO35352 All Receipt Dates All Line Item Types
All Item ID/GL/WOs All Rec. Employees All Currencies
Grouped by Vendor ID

Purchase Order ID/ Carr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID\Vendor Name		VC-COP001	Thyssenkrupp Materials CA Ltd								
PO35352	2		M7075T6B5.000X1.0 f 00		2/28/2017	2/22/2017	8.0000	\$24.98	0.0000	0	\$199.81
CAD	No		7075-T6 BAR 5.000" f X 1.000" m136904		8.0000	PL0U01		\$199.81	0.0000	0	
	3		71401-45		2/28/2017	2/22/2017	1.0000	\$0.00	0.0000	0	\$0.00
	No		PROCUREMENT QUALITY CLAUSES m136904		1.0000	PL0U01		\$0.00	0.0000	0	

B I L L O F L A D I N G

No: PEC 31809

Ship From:
 THYSENKRUPP MATERIALS NA
 121 LANGSTAFF ROAD
 CONCORD, ONTARIO L4K 5C6
 Tel: 905 669 9444 Fax: 905-738-9033

Ship Date 21Feb17 at 10:45 From PFW
 Probill
 Via VIM DELIVERY
 FOB CONCORD
 Frt PREPAID
 Route 0- 0 Manifest
 Vhcle Trailer
 Slp STAN IVERS (905-532-1350)
 Sold To: (20115)
 DART AEROSPACE
 1270 ABERDEEN ST
 HAWKESBURY, ON K6A 1K7

Ship To: (1)
 DART AEROSPACE
 1270 ABERDEEN ST
 HAWKESBURY, ON K6A 1K7
 Tel: 613-632-9577 Fax: 613-632-1053

B I L L O F L A D I N G

Our Order PEC- 19505- 1 Your PO # 35352
 MINUM PLATE 7075-T651 DOMESTIC
 10" THICK X 5.0000" X 95.6250"

Heat Number 9350450
 Tag No 620420

Quantity 3.32 SFT PCS 1 Wt LBS 52

TOTAL: Tags 1 PCS 1 LBS 52

Number 50 *** Chemical Analysis ***

TEST REPORTS, PACKING SLIPS ARE TO SENT
 MATERIAL AND FAXED TO THE CUSTOMER PRIOR
 SHIPPING.

CHANTAL/LINDA
 ALL PACKING SLIPS MUST HAVE THE HEAT NUMBER **
 REFERENCED ON IT **

1 BDL GW. 65 LBS

CUSTOMER PICK-UP HRS AT THYSENKRUPP MATERIALS NA
 CONCORD, ONT. *** 9:00 AM TO 4:00 PM ***
 TEL. 800-926-2600 ****

 WE STOCK STAINLESS STEEL *
 PLEASE LET US QUOTE YOUR NEXT REQUIREMENT *

Page: 1Continued

 TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE
 RAPPORTÉES IMMÉDIATEMENT
 REPORTS ON SHORTAGE MUST BE REPORTED IMMEDIATELY
 DEMARCHANDISES AVEC NOTRE NUMÉRO D'APPROBATION SEULEMENT
 MARCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

BONNE CONDITIONS / RECEIVED IN GOOD CONDITION
 017327981 TQ001 TPS/GST TVH/HST # 140223934 RT0001

DATE

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

ALUMINUM PLATE 7075-T651 DOMESTIC
1.00" THICK X 5.0000" X 95.6250"
PART NO.

PO/Rel 35352

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-031809-001

21Feb17

Signed by:

Pg 1/2



Constellium



CERTIFIED TEST REPORT
Constellium Rolled Products
Ravenswood, LLC

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THYSSENKRUPP CA
2821 LANGSTAFF ROAD
CONCORD ON
L4K 5C6
CA

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THYSSENKRUPP CA
2821 LANGSTAFF ROAD
CONCORD ON
L4K 5C6
CA

PECKOVERS		110443237	4075	INCLUSION		Serial:20160721-0110443237	Pg 1of2
CUSTOMER PURCHASE ORDER NO. & ITEM PEC-275877				Constellium ORDER NO. 182317			
ALLOY 7075	CLAD	TEMPER T651	GUAGE 1.03000 in 26.16 mm	WIDTH 60.50000 in 1,537 mm	LENGTH 144.50000 in 3,670 mm		
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH							
CUSTOMER SPECIFICATION AMS QQ-A-250/12A							
PART NUMBER			B/L NUMBER 84636		DATE SHIPPED 07/22/2016		
WT. SHIPPED 1960.000 LB		NO. OF PIECES 000002		GOVT. CONTRACT NO.			
CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26184 USA <i>Steve Good</i> Steve Good - Laboratory Manager							

ALL LOTS ON THIS CERTIFICATION ALSO CONFORM TO THE FOLLOWING REQUIREMENTS:

AMS 4045K
ASTM B209-14
Load Details

DAS

14

9-B9

17/02/24

Package	Nel Lbs	Kg	Lot	Piece	Serial	Parent Lot
1001305386	980.000	444.520	9350450	01		
1001305386	980.000	444.520	9350450	03		

Lot: 9350450

Tensile - Room Temperature (US)

Direction	Tests	Ultimate (KSI)		Yield (KSI)		Elongation (%)	
		Min	Max	Min	Max	Min	Max
LT	02	82.2	84.2	72.3	74.4	11.5	12.5

Tensile - Room Temperature (SI)

Direction	Tests	Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)	
		Min	Max	Min	Max	Min	Max
LT	02	567	581	498	513	11.5	12.5

P-860-155D REVISED: 10 2014

THYSSENKRUPP MATERIALS NA

AEROSPACE

NUM PLATE 7075-T651 DOMESTIC
THICK X 5.0000" X 95.6250"
NO.

PO/Ref 38352

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Certificate of Mill Test Results

Bl. PEC-031809-001

21Feb17

Signed by:

Pg 2/2



Constellium



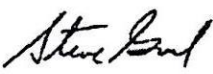
CERTIFIED TEST REPORT
Constellium Rolled Products
Ravenswood, LLC

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THYSSENKRUPP CA
2821 LANGSTAFF ROAD
CONCORD ON
L4K 5C6
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THYSSENKRUPP CA
2821 LANGSTAFF ROAD
CONCORD ON
L4K 5C6
CA

PECKOVERS		110443237		4075		INCLUSION		Serial:20160721-0110443237		Pg 2of2					
CUSTOMER PURCHASE ORDER NO. & ITEM PEC-276877						Constellium ORDER NO. 182317									
ALLOY 7075		CLAD		TEMPER T651		GAUGE 1.03000 in 26.16 mm		WIDTH 60.50000 in 1,537 mm		LENGTH 144.50000 in 3,670 mm					
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH						CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Steve Good - Laboratory Manager									
CUSTOMER SPECIFICATION AMS QQ-A-250/12A				PART NUMBER								B/L NUMBER 64636		DATE SHIPPED 07/22/2016	
WT. SHIPPED 1960.000 LB		NO. OF PIECES 000002		GOVT. CONTRACT NO.											
Chemistry (Actual)															
Core		SI		FE		CU		MN		MG					
		0.06		0.17		1.45		0.05		2.47					
										CR					
										0.20					
										ZN					
										5.68					
										TI					
										0.02					
										ZR					
										0.01					
OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER															
All material contained in this lot was cast and manufactured in the USA															
THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY OR AUTHORIZED QUALITY DELEGATE. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. CHEMISTRY BY OES: ARKSPARK CHEMISTRIES REPORTED IN PERCENTAGE BY WEIGHT WHEN FRACTURE TOUGHNESS TEST REQUIRED, TESTED PER ASTM E399 WHEN TENSILE TEST REQUIRED, TESTED PER ASTM E8; B557 DUNS Number: 080570149; CAGE Code: 1YW19 Mercury is not a normal contaminant in aluminum alloys and neither mercury nor any of its compounds were utilized in the manufacture of our product. "END OF CERTIFICATION"															

P-860-155D REVISED: 10 2014

MATERIAL RECEIPT INSPECTION FORM

MATERIAL 17707ST6BS.000X1.00

PO - BATCH NO 35352/136904

DATE 17/02/24

MATERIAL CERT REQ'D yes
 QUANTITY RECEIVED 8
 QUANTITY INSPECTED 8
 QUANTITY REJECTED

THICKNESS ORDERED 1.00
 THICKNESS RECEIVED 1.110
 SHEET SIZE ORDERED
 SHEET SIZE RECEIVED

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) X	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL	(Y) N	707ST6
CORRECT THICKNESS	(Y) N	1.110
PHOTO REQUIRED	Y (N)	
CORRECT MATERIAL	(Y) N	AMS-DD-A-250112
CORRECT REF # TO LINK CERT	(Y) N	HEATH 9350450
CORRECT MATERIAL IDENTIFICATION	(Y) N	17707ST6BS.000X1.00
CORRECT M# ON THE MATERIAL	(Y) N	136904
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRB	DUR A	DUR D	
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY	<u>14</u>	SIGNED OFF BY	
DATE	<u>17/02/24</u>	DATE	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO35352**

Purchase Order Date 2/17/2017

PO Print Date 2/17/2017

Page Number 1 of 2

Order From : VC-COP001
THYSSENKRUPP MATERIALS CA LTD
O/A VPK METAL- C/O T27540/PO BOX 4275, POSTAL "A"
TORONTO, ON M5W 5V8
CA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FEB 17 2017

Contact Name		Buyer	Chantal Lavoie
Vendor Phone	905 669 9444	Customer POID	
Ship To Contact		Customer Tax #	10127-2607
Ship To Phone		Terms	Net 30
Ship Via:	VENDOR'S TRUCK	Currency	CAD
Ship Acct:		FOB	FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M303B1.000X03.000	303 BAR 1" X 3'	2/28/2017 No 2/28/2017		12.00 f	\$66.75	\$801.00
MATERIAL: AISI 303 SS BAR AS PER ASTM A582 NOTE: AISI 304/316 NOT ACCEPTABLE							

Line Total: \$801.00

2	M7075T6B5.000X1.000	7075-T6 BAR 5.000" X 1.000"	2/28/2017 Yes 2/28/2017		8.00 f	\$32.50	\$260.00
MATERIAL: 7075-T6 OR T651/T6510/T6511/T62 ALUMINUM BAR AS PER AMS-QQ-A-225/9 OR AMS 4122/4123/4186/4187 OR PER AMS-QQ-A-200/11 OR QQ-A-250/12 CUT FROM PLATE							

Line Total: \$260.00

PO Instructions: PEC ST-19224

Note:

2/17/2017

Work Order ID 159677

Monday, April 17, 2017 1:31:33 PM

159677

Per concession 40000061786

U/R

Page 1

Item ID: D4842-4 **POSITIVE RECALL** Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 16-692 Stop ***NS2***
Item Name: Lower Cutter Body, RH
Start Date: 4/19/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 4/28/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference: SCHEDULED/U CONCESSION 40000061786
Approvals: Process Plan: [Signature] Date: **APR 17 2017** Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4842	<u>BU/R</u> <u>Per concession 40000061786</u>								
100	BAND SAW	0.00				<u>6</u>	<u>Ø</u>		DAS 20 9-89 <u>17-04-18</u>
100									
Bandsaw	Memo	0.01							
Jeaspa Bandsaw	Cut Blank at 7.250"								
110	HAAS CNC VERTICAL MACHINING #1	0.62				<u>6</u>	<u>Ø</u>		DAS 20 9-89 <u>17-04-20</u>
110									
HAAS 1	Memo	2.35							
HAAS CNC vertical machine #1	1-Machine per folio FB192 DWG REV: <u>B</u> FOLIO REV: <u>AA</u>								

2- deburr and break all sharp edges

* Per concession 40000061786 *

10.8mm to 0.0mm
to 0.20mm

0.425" to 0.000"
to 0.0075"

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mis-labeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		☐ OTHER :							

Work Order ID 159677

Monday, April 17, 2017 1:31:33 PM

159677

Page 2

Item ID: D4842-4 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 16-692 Stop ***NS2***
Item Name: Lower Cutter Body, RH
Start Date: 4/19/2017 Start Qty: 6.00 ***6*** Cust Item ID:
Required Date: 4/28/2017 Req'd Qty: 6.00 ***6*** Customer:
Reference: SCHEDULED/U
Concession 400000061786
Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00				6	0		DAS 20 17-04-20 9-89
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00				6	0		DAS 08 17-04-23 9-89
140 *140* Outsource4 Outsource process - Anodize	Outsource process-Anodize per QSI017 4.1.10.1 Memo Issue P/O to ATG : 361664 1- Black Anodize as per Dwg D4842 2- PRIME AS PER DWG, SEE NOTE #2 Certification of Conformity is required	0.00 0.00				6			DAS 13 MAY 02 2017 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
QC / QA Coordinator Approval									

Root Cause				FAULT CATEGORY			
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
				Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
				Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
				Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
				Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
				Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
				Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
				Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
				OTHER : ☐			

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Page 3

Setup Start *NS1*
Stop *NS2*

Customer:

CONCESSION 400000061786

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run	Start	*NR1*
	Stop	*NR2*

150 **Receive & Inspect for Damage & Mat'l Certs**

Memo

0.00

0.00

155 QC5- Inspect part completeness to step on W/O

Memo

0.00

Quality Control

**F.A.I.R. COMPLETION
REQUIRED**

MATERIAL CERTIFICATION REQUIRED

APPROVAL

ONLY

DAS
9
-9-88

⑥ 17.05.30

180	Identify as per dwg & Stock Location.	0.00
-----	---------------------------------------	------

Memo

0.00

Packaging

IDENTIFY WITH DART P/N USING FINE POINT PERMANENT INK MARKER

DAS 6

MAY 30 2017

3-89

POSITIVE RECALL

EFFECTIVE 7/28/13 AUTH

RELEASED 9 DATE 17-05-30

9.89

CONCESSION 400000061796

* ARC must be created by GA

* ARE must contain concession Number

* All Parts must be identified w/ concession Number

* Fair must be completed

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐		AGAINST DEPARTMENT/PROCESS Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev I

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Page 4

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

6

Customer:

6

Reference: SCHEDULED/U

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Operation Description

Set Up/ Run Hours

Tool ID	Tool #	Plan Code
---------	--------	-----------

**Accept
Qty**

Reject Qty

Reject
Number**Insp.
Stamp**

190

QC21- Final Inspection - Work Order Release

0.00

190

Memo

0.00

QC

Quality Control

DAS
21
9-89

MAY 31 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

Picklist Print

Monday, April 17, 2017 1:31:33 PM

Page 1

Work Order ID: 159677

159677

Parent Item: D4842-4

D4842-4

Parent Item Name: Lower Cutter Body, RH

Start Date: 4/19/2017

Required Date: 4/28/2017

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV: A NEW ISSUE JFS 13/04/30 VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B5.000X1.000		Purchased	No			100	f	13.0290	0.605	3.821053			DAS
M7075T6B5 000X1 000									**	3.637		20	1704-18
7075-T6 BAR 5.000" X 1.000"												9-89	
Location						Loc Qty		Loc Code					
MAT005						13.029							
M136904						1.029							
M137300						12		3.637					

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY					
Environment ☐	☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐			
Design ☐	☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐			
Doc/Data ☐	☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐			
Equip/Tooling ☐	☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐			
Handling/Pre ☐	☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐			
Material ☐	☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐			
Internal Transport ☐	☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐			
Tribal Knowledge ☐	☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐			
LOA ☐	☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐			
Substation ☐	☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐			
Past Expiry Date ☐	☐	Manufacturing Process ☐	OTHER : _____						
Misidentified ☐	☐	Past Due ☐							

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev I

DART AEROSPACE LTD		Work Order: 159677
Description: Lower cutter Body, RH		Part Number: D4842-4
Inspection Dwg: D4842	Rev: B	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
.12 X 45°	+/- .030	.125	✓		SLIO	Vein
.168	+0.003/-0.000	.169	✓		↓	
.425	+0.000/-0.0078	.420	✓		↓	
3.68	+/- .030	3.675	✓		↓	
5.50	+/- .030	5.500	✓		↓	
R1.00	+/- .030	1.000	✓		Rad gauge	
R1.88	+/- .030	1.880	✓		↓	
R1.03	+/- .030	1.030	✓		↓	
R.34	+/- .030	.340	✓		↓	
0.90	+/- .030	.901	✓		SLIO	Vein
0.24	+/- .030	.247	✓		↓	
1.47	+/- .030	1.468	✓		↓	
1.51	+/- .030	1.510	✓		↓	
6.52	+/- .030	6.525	✓		↓	
23.7°	+/- 0.5°	23.7°	✓		Protractor	
6.8°	+/- 0.5°	6.8°	✓		↓	
30.2°	+/- 0.5°	30.2°	✓		↓	
R.25	+/- .030	.250	✓		Rad gauge	
4.580	+/- .010	4.581	✓		Height gauge	
4.220	+/- .005	4.220	✓		SLIO	Vein
2.110	+/- .005	2.110	✓		↓	
2.400	+/- .005	2.400	✓		↓	
1.200	+/- .005	1.200	✓		↓	

Measured by: ^{DAS} 20 9-89	Audited by: ^{DAS} Ba 08 9-89	Preliminary Approval:
Date: 17-04-20	Date: 17-04-23	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

DQA: _____ Date: _____



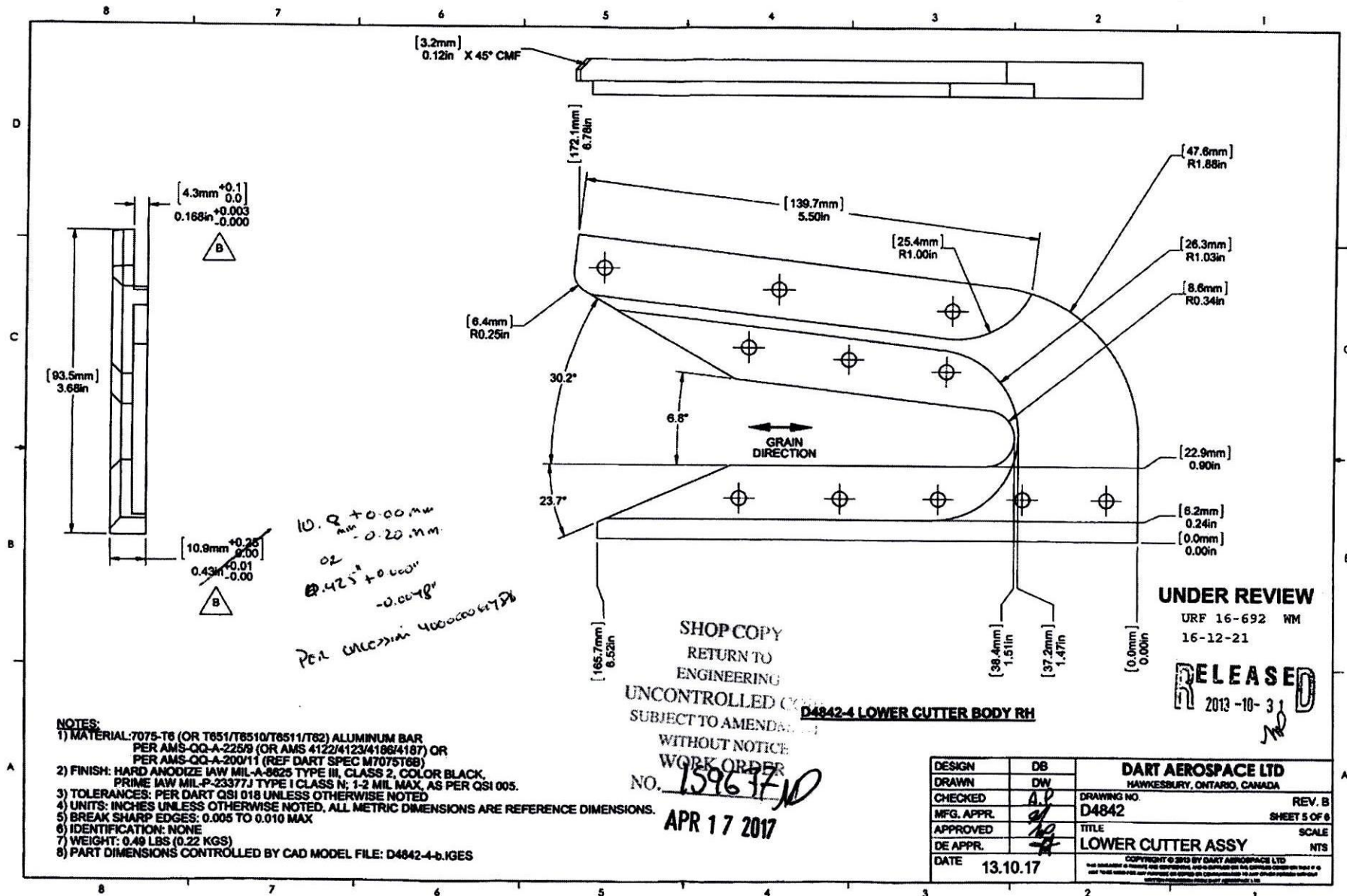
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date:

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
		OTHER :							



DQA: _____ Date: _____

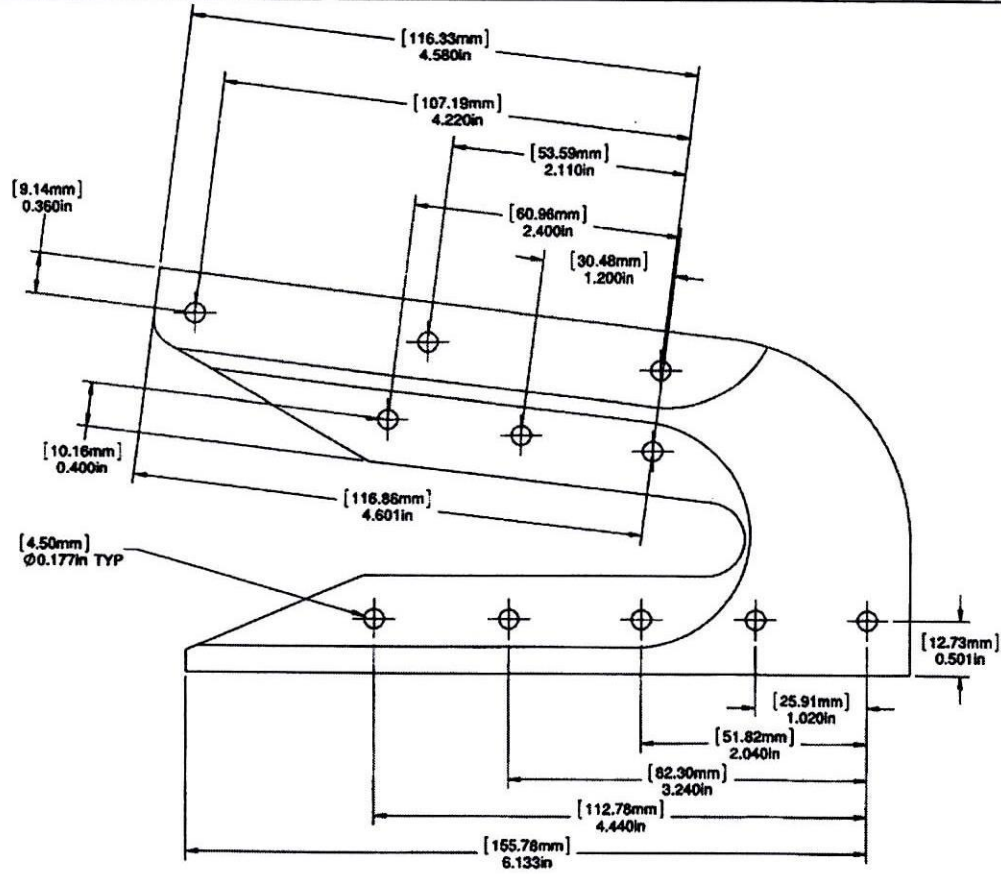


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
OTHER : ☐									



UNDER REVIEW

URF 16-692 WM
16-12-21

RELEASED
2013-10-31

D4842-4 LOWER CUTTER BODY RH
(AUXILIARY VIEW)

DESIGN	DB	DART AEROSPACE LTD	
DRAWN	DW	HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.P.	DRAWING NO.	REV. B
MFG. APPR.	91	D4842	SHEET 6 OF 6
APPROVED	23	TITLE	SCALE
DE APPR.	23	LOWER CUTTER ASSY	NTS
DATE	13.10.17	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS UNCLASSIFIED AND IS AVAILABLE TO THE PUBLIC WITHOUT RESTRICTION. IT IS THE PROPERTY OF DART AEROSPACE LTD. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.	

		Supplier Concession				PAGE 1 of 2	PLANT Leonardo Helic. - Vergiate	
Supplier NC N.	AWC 006/01	Date	02.02.2017	AW Concession	400000061786	Purchase Order	4801373666	
P/N	6F9540V00231			Grade/Category	NC	Drawing Issue		
Part Description	PROTECTR, CCP ASSY LOWER			Batch Quantity	20,000	Defective Quantity	20,000	
AW NC	GUIDO BRUSCINO			A/C Type/Model	AW6			
Supplier	DART AEROSPACE LTD			Contract				
Defect FO01 - Wrong dimensions - * 02.02.2017 09:40:16 GUIDO BRUSCINO (40067) * see supplier document attached - B/N quantities and PO's listed in the Cause of Defect								
					Repetitiveness (same P/N - Defect Code)		NO ☒ YES ☐ Follow	
ENGINEERING Evaluation and Proposal								
Engineering Evaluations, including Specialist Inputs:				Investigation Report n.		Compliance Report n.		
* 10.02.2017 18:01:48 MARCELLO STEFANELLI (9273) * The part is acceptable with the action proposed by the supplier applied.								
Classification of Deviation from Type Design i.a.w. EASA Part 21A.91 : Minore/B								
Defect effect					Limitations			
	Before Repair		After Repair					
Safety	☐ YES	☐ YES ☐ NO	☐ YES (to specificity) ☒ NO					
Life or Duration	☐ YES	☐ YES ☐ NO						
Strength	☐ YES	☐ YES ☐ NO						
Performances	☐ YES	☐ YES ☐ NO						
Interchangeability	☐ YES	☐ YES ☐ NO						
Reliability	☐ YES	☐ YES ☐ NO						
Maintainability	☐ YES	☐ YES ☐ NO						
Installability	☒ YES	☐ YES ☒ NO						
Testability	☐ YES	☐ YES ☐ NO						
Only Appearance	☐ YES	☐ YES ☐ NO						
No Effect	☐ YES	☐ YES ☐ NO						
Repair Proposal:					Decision			
* 10.02.2017 18:01:48 MARCELLO STEFANELLI (9273) * See attached supplier document.					☐ Use rep. with spec.repair(not yet applied) ☒ Use repaired with known repair(yet applied) ☐ Use As Is ☐ Use repaired for tests only(see Limitations) ☐ Use As Is for tests only(see Limitations) ☐ Scrap			
Concession Classification		☐ MAJOR ☒ MINOR		Re-submit after Repair		☐ YES ☒ NO		
Mark part with Concession		☒ NO ☐ YES		Method :				
ATE	MARCELLO STEFANELLI		CPE			Date	10.02.2017	
Checks and tests to be performed								
Repair registration with repair WO ☒ Number:								
Repair Evaluation:								
Final Decision								
S/N	Use As Is (UTI)	Use Repaired (RIL)	Scrap (SCA)	S/N	Use As Is (UTI)	Use Repaired (RIL)	Scrap (SCA)	
	☐	☐	☐		☐	☐	☐	
	☐	☐	☐		☐	☐	☐	
	☐	☐	☐		☐	☐	☐	
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	☐	☐	☐		☐	☐	☐	
	☐	☐	☐		☐	☐	☐	
Not Serialized	Use As Is (Q.ty)	Use Repaired (Q.ty)	Scrap (Q.ty)					
Role	AW ATE	AW CPE	Inspection Clearance Repair	Quality	Customer	MoD or Authority Representative		
Signature	MARCELLO STEFANELLI							
Date	10.02.2017							



Supplier Concession

PAGE
2 of 2

PLANT
Leonardo Helic. - Vergiate

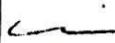
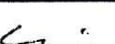
Supplier NC N.	AWC 006/01	Date	02.02.2017	AW	400000061786	Purchase Order	4801373666
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DEFECT 0001

FO01

Wrong dimensions

attachment

 AgustaWestland A Finmeccanica Company		CONCESSION				Pag. 1 of 2	
Manuf. Doc. N.	AWC 006	Date		AW Doc. N.		Purchase Order	4800671131 4800722284 4801147764 4801186922 4801218851 4801288960 4801373666
AW P/N	6F9540V00231	S/N / Batch Number	B109195 Qty. (1) B133355 Qty. (2) B134314 Qty. (1) B134315 Qty. (1) B134842 Qty. (1) B137492 Qty. (1) B137355 Qty. (2) B137816 Qty. (1) B137817 Qty. (1) B140379 Qty. (3) B140381 Qty. (2) B147002 Qty. (2) B150786 Qty. (1)	Grade	A	AW Drawing Issue	B
Description	Lower Cutter Assy			Batch Qty	20	Defective Qty	20
Manufacturer	Dart Aerospace			Model	AW169		
Defect(s) Description							
Leonardo has informed Dart that there are interference issues installing the lower cable cutter D4842-041 onto the Leonardo interface bracket.							
				Department	Inspector	Signature	Date
				Quality	DAS 16 9-89		2017/02/01
Defect(s) Cause							
The Lower Cutter body has a dimension of 10.9 +0.25/-0.00 mm. This dimension was reported as part of the approved FAI and has been met with all delivered product.							
				Department	Inspector	Signature	Date
				Quality	DAS 16 9-89		2017/02/01
Corrective Action						Complete Before	
In order to mitigate the interference issue for Leonardo, Dart is proposing to remove sufficient material to make the overall installation dimension at 22.15 mm +0.05/-0.35.							
				Department	Inspector	Signature	Date
				Quality	DAS 16 9-89		2017/02/01

For "MANUFACTURER" SUPPLIERS ONLY
ENGINEERING evaluation and proposal

Engineering evaluation

 Investigation report n.....
 Compliance report n.....

Dart's position is that this change will not impact the structural substantiation presented in Report DA169-4 for the lower cutter body since this is not a section with the lowest margin. Therefore removing 0.3 mm max from each part will not impact the structural integrity of the lower cutter assembly. The dimension on the cutter body part D4842-3/-4 will be 10.80 +0.00/-0.200.

The dimension change of the two lower cutter body parts mating, plus the sealant, anodize and primer layers will be defined as a dimension of 22.15 +0.05/-0.35 mm on the assembled lower cutterbody and will be incorporated into the D4842 drawing for inspection.

	Defect effects		Limitations
	Before any repair	After any repair	
	☐ yes	☐ yes ☐ no	☐ yes (specify) ☒ no
Safety	☐ yes	☐ yes ☐ no	
Life	☐ yes	☐ yes ☐ no	
Strength	☐ yes	☐ yes ☐ no	
Performances	☐ yes	☐ yes ☐ no	
Interchangeability	☐ yes	☐ yes ☐ no	
Reliability	☐ yes	☐ yes ☐ no	
Maintainability	☐ yes	☐ yes ☐ no	
Installability	☒ yes	☐ yes ☒ no	
Testability	☐ yes	☐ yes ☐ no	
Only aspect	☐ yes	☐ yes ☐ no	
Repair Proposal		Decision to use	
None		☐ Use repaired with specific repair ☐ Use repaired with known repair ☐ Use as is ☐ Use repaired for tests (see Limitations) ☐ Use as is for tests (see Limitations) ☒ Scrap	
Concession Classification	☒ Major ☐ Minor		Submit after repair
			☐ yes ☐ no



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO36166

Purchase Order Date 5/2/2017

PO Print Date 5/24/2017

Page Number 1 of 11

Order From :

VC-ATG001

Ship To : DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED
MAY 25 2017

Contact Name

Vendor Phone 613-446-4544

Ship To Contact

Ship To Phone

Ship Via: VENDOR'S TRUCK

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	159671	D4842-1 LOWER CUTTER REV. B	6/16/2017 Yes 6/16/2017		4.00	\$12.05	\$48.20
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							
Line Total:							\$48.20
2	159676	D4842-3 LOWER CUTTER REV. B	5/29/2017 Yes 5/29/2017		6.00	\$10.25	\$61.50
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							
Line Total:							\$61.50
3	159677	D4842-4 LOWER CUTTER REV. B	5/29/2017 Yes 5/29/2017		6.00	\$10.25	\$61.50
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

5/24/2017



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913318

Date: 25-May-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.			
6 ea	Part: D4842-3 Lower Cutter Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils). Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0001-.0002" (1 - 2 mils) per drawing. Job: 21054	Rev: B	PO: PO36166 Line: 2
6 ea	Part: D4842-4 Lower Cutter Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils). Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0001-.0002" (1 - 2 mils) per drawing. Job: 21055	Rev: B	PO: PO36166 Line: 3
CERTIFICATE OF CONFORMANCE A.T.G. Industries Inc. certifies that all items in this shipment conform to the requirements. Date: <u>25/05/2017</u> Certified Signature: <u>[Signature]</u> Receiver Signature: <u>SP 17-5-26</u> A.T.G. Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited. Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.			

Made in Canada.

Purchase Order Receipt Listing

Monday, April 17, 2017 11:22:35 AM

Page 1 of 1

All amounts are calculated in domestic currency.

All Vendors PO ID PO35724 Receipt Dates from 4/13/2017 to 4/13/2017 All Line Item Types
All Item ID/GL/WOs All Rec. Employees All Currencies
Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID/Vendor Name VU-MET002 A.M. Castle & Co. (Canada) Inc.- C/O 910720											
PO35724	3		M707516B0.375X6.0 f 00 3 5 7		4/17/2017	4/13/2017	12.0000		0.0000	0	\$0.00
USD	No		7075-T6 Plate 0.375" f X 6.000" QQ-A 250/12 m137300		12.0000	PL0U01			0.0000	0	
	4		M707516B2.000X0.0 f 750 7 5 6 2 5		4/17/2017	4/13/2017	12.0000		0.0000	0	\$0.00
	No		7075-T6 BAR 2.000" f X 0.750" # 35 m137300		12.0000	PL0U01			0.0000	0	
	5		M707516B5.000X1.0 f 00 0 2 5		4/17/2017	4/13/2017	12.0000		0.0000	0	\$0.00
	No		7075-T6 BAR 5.000" f X 1.000" # 35 m137300		12.0000	PL0U01			0.0000	0	
	6		M7075173B4.000x4. f 000 0 2 5		4/10/2017	4/13/2017	4.0000		0.0000	0	\$0.00
	No		7075-T73 Bar 4.0 x 4.0 grain direction along 4" wide m137300		4.0000	PL0U01			0.0000	0	

Total Received Quantity: 40.0000
Total Qty to Inspect (PO U/M): 0.0000
Total Reject Quantity: 0.0000
Total Receipt Value: \$0.00
Total Balance Due Quantity: 0.0000



Castle Metals®

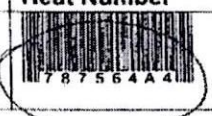
A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3248910

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 11-APR-17	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier MANITOULIN		BOL No 3248910-2		

Shipment Details				Final Destination Branch - TOR			
Order No 4706819	Line No 3	Item No 752188.MO	Description 1.0000.PL.7075.T651.ALUMINUM US1.48.5000.144.5000 CUT 2SIDED TO 5 IN (±.1250/- .0000 IN) X 144.5 IN () - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12 Email P/s and certs to: clavoie@dartaero.com				
Purchase Order No 35724		Part Number		Ordered Qty 1.00 PCS		Invoice Qty 1.00 PCS	
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No. 120973957	Mill	Heat Number 	Mech Id	PCS 1	Width (IN)	Length (IN)	Shipped Qty(LBS) 75.2348

These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. Government or as otherwise authorized by U.S. law and regulations.

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Date Printed: 11-APR-2017 03:25:11 PM

SHIP TO: A M CASTLE METALS 4175 ROYAL DRIVE, SUITE 600 KENNESAW, GA 30144
SOLD TO: AM CASTLE & CO- SOLD TO 1420 KENSINGTON RD SUITE 220 OAK BROOK, IL 60523

KAISER
ALUMINUM
 Trentwood Works - Spokane, WA 99215
 Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
 4419943

CUSTOMER PO NUMBER: 383160		WORK PACKAGE:		CUSTOMER PART NUMBER: 752188		SHIP RUN/LOAD: 1C3575/11		GOVT CONTRACT NUMBER:	
KAISER ORDER NO: 1214391	LINE ITEM: 1	SHIP DATE: 26-MAY-2016	ALLOY: 7075	CLAD: BARE	TEMPER: T651	PRODUCT DESCRIPTION: KaiserSelect Plate			
WEIGHT SHIPPED: 3610 LB	QUANTITY: 5 PCS EST.	TRUCK BOL #: 2060482	GAUGE: 1.0000 IN (25.4000 MM)	DIAMETER/WIDTH: 48.500 IN (1231.0 MM)		LENGTH: 144.500 IN (3670.3 MM)			

MHU 2005043: LOT 787564A4: 5 pieces;

Certified Specifications

AMS 4045/RevK
 ASTM B 209/Rev14
 BSS 7055/RevB
 DPS 4.713/RevAK
 PS 21211/RevP

AMS-QQ-A-250/12/RevA
 ASTM B 594/Rev13
 CMMP 025/RevU
 GAMPs 9101/RevB:AmdSCN1

AMS STD-2154/RevA
 BAC 5439/RevJ
 CSTI 006/RevE
 GSS16100/RevG:Amd1

Test Code: 1512

Test Results

Lot: 787564A4 Cast 189 Drop 62 Ingot 3 Parent Lot: 17395283 Melted in USA

(ASTM E8/B557)
 (EN 2002-1)

Tensile:	Temper	Dir. # Tests	Ultimate KSi (MPa)	Yield KSi (MPa)	Elongation %
	T651	LT / 2 (Min:Max)	82.8 : 83.1 (571 : 573)	73.3 : 73.8 (505 : 509)	13.5 : 13.7

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.05	0.11	1.5	0.01	2.8	0.20	5.7	0.02	0.01	0.01	TOT 0.05

JUN 01 2016



MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-3563.24100
DATE: 17-04-17

PO BATCH NO: 3235324/1137300

MATERIAL CERT REC'D: YES
QUANTITY RECEIVED: 15
QUANTITY INSPECTED: 15
QUANTITY REJECTED: 0

THICKNESS ORDERED: 1"
THICKNESS RECEIVED: 1"
SHEET SIZE ORDERED: N/A
SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR Check Y/N	COMMENTS
SURFACE DAMAGE	Y <u>N</u>	
CORRECT FINISH	Y <u>N</u>	
CORROSION	Y <u>N</u>	
CORRECT GRAIN DIRECTION	Y <u>N</u>	
CORRECT MATERIAL	Y <u>N</u>	
CORRECT THICKNESS	Y <u>N</u>	
PHOTO REQUIRED	X <u>N</u>	
CORRECT MATERIAL	Y <u>N</u>	
CORRECT REF # TO LINK CERT	Y <u>N</u>	<u>AMS QQ A250</u> <u>HT #78756124</u>
CORRECT MATERIAL IDENTIFICATION	X <u>N</u>	
CORRECT M# ON THE MATERIAL	Y <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW:				
	HRC	HRB	DUR A	DUR D
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>CB</u>	SIGNED OFF BY: _____		
DATE: <u>17-04-17</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel. 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO35724

Purchase Order Date 3/24/2017

PO Print Date 3/24/2017

Page Number 3 of 4

Order From :

VU-MET002

METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W OE9
CANADA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via:

Yours ppd

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

USD

Destination-Collect

5 M7075T6B5.000X1.000 7075-T6 BAR 5.000" X 1.000" 4/13/2017

12.00

\$37.38

\$448.56

Yes

4/13/2017

MATERIAL: 7075-T6 OR T651/T6510/T6511/T62 ALUMINUM BAR
AS PER AMS-QQ-A-225/9 OR AMS 4122/4123/4186/4187 OR
PER AMS-QQ-A-200/11 OR QQ-A-250/12 CUT FROM PLATE

Line Total:

\$448.56

6 M7075T73B4.000x4.000 7075-T73 Bar 4.0 x 4.0 grain direction along 4" wide 4/13/2017

4.00

\$124.25

\$497.00

Yes

4/13/2017

MATERIAL: 7075-T73/T73510/T73511 BAR AS PER AMS-QQ-A-200/11 OR AMS-QQ-A-225/9 OR AMS 4124 OR AMS-QQ-A-250/12 OR AMS 4078

NOTE: GRAIN DIRECTION MUST RUN ALONG 4" WIDE

Line Total:

\$497.00

7 M7075T73R1.000 7075-T73 Rd Bar 1.00 4/11/2017

36.00

\$7.80

\$280.80

Yes

4/11/2017

MATERIAL: 7075-T73 OR 7075-T7351/T73510/T73511 ROUND BAR
AS PER AMS-QQ-A-200/11 OR AMS-QQ-A-225/9

Note:

3/24/2017

SP17-4-17

SP17-4-3